



# **WEB APPLICATION DEVELOPMENT**

## **SSE3150-1**

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**TITLE:**

KPP TEST SYSTEM

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**PREPARED FOR:**

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# 1. Introduction

The KPP Test System is built to evaluate colour-blind test to pass a driving license. The purpose of the Driver Education Curriculum Test (KPP Test System) is to test participants' eye vision for colour. After you attend the practical class, you must pass a computerised theory test from JPJ to get an L in Malaysia license before you can drive vehicles such as cars, and motorcycles. This exercise contains 10 questions and the questions are provided in Bahasa Malaysia. You are advised to take a sight distance of 75cm while answering. If you fail to answer all questions correctly, you are advised to see an eye doctor for further examination.

## 2. Functional Requirement

### 2.1. Use Case Diagram

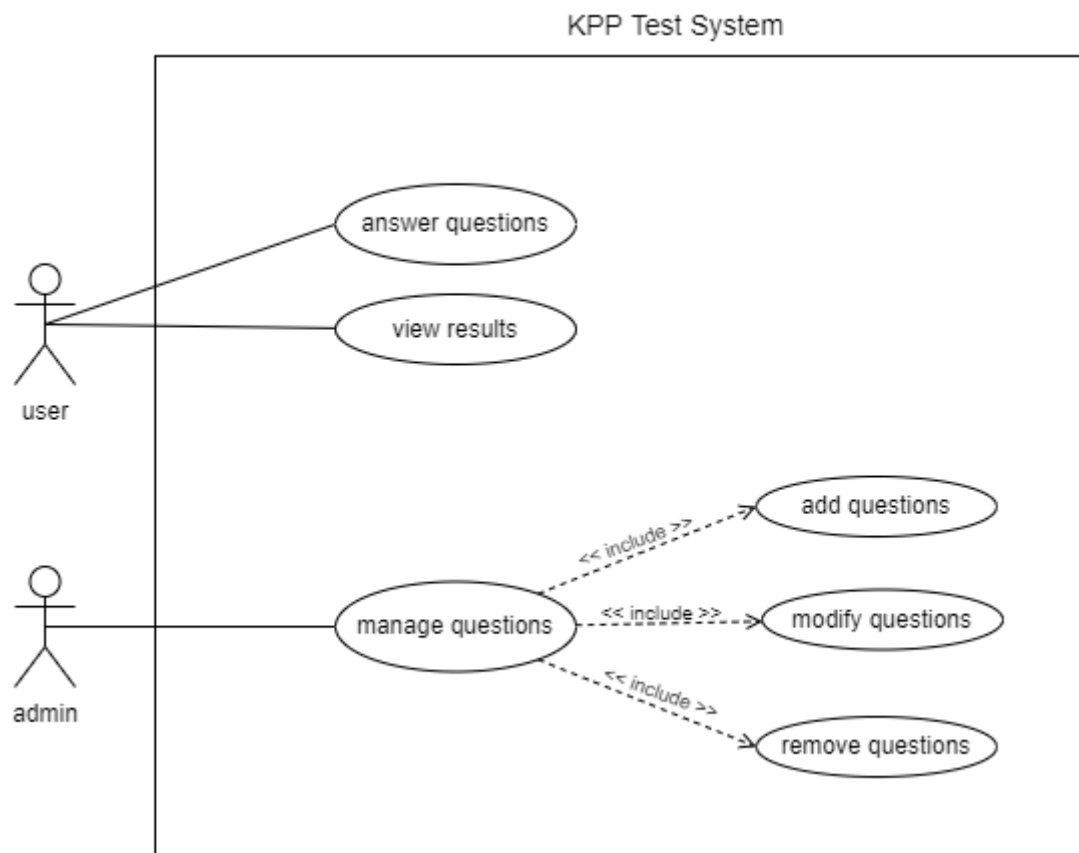


Figure :2. Use Case Diagram

## 2.2. Use Case Description

### 2.2.1. Login

Brief Description	The user wants to log in into the web application
Actors	User and admin
Preconditions	The user has registered into the system.
Main Flow	After the user has registered, the user and admin will click the login button to go into the login page. User will insert the required information. If it is correct, the user will be logged in and will be directed to the homepage.
Alternative Flows	<ol style="list-style-type: none"><li>1. If an incorrect input is inserted, the user will be redirected to the same login page but there will be an error message at the top of the login form. User needs to re-enter required information and try to login again.</li><li>2. The user can logout by clicking the logout button.</li></ol>
Postconditions	Logged in and into the homepage.

*Table 2. Login Use Case Description*

### 2.2.2. Answer Question

Brief Description	A user will answer questions to pass the KPP test.
Actors	User
Preconditions	The customer has signed on to the system.
Main Flow	<p>After the customer has successfully signed on to the system, the user will be redirected to the questions section. The user will need to answer all questions before submitting the answers.</p> <p>After submission, the user can display their results</p>
Alternative Flows	If the user unsuccessfully login, the user cannot answer the questions.
Postconditions	The user can display their results.

*Table 3. : Use Case Description Answer Question*

### 2.2.3. View Results

Brief Description	A user will view their results after answering all questions
Actors	User
Preconditions	The customer has submitted all answers.
Main Flow	After the customer has successfully submitted all their answers, the user will view their result on whether they pass the test or not.
Alternative Flows	If the user does not answer all questions, the user cannot display their results.
Postconditions	The user will be logged out.

*Table 4. : Use Case Description View Results*

#### 2.2.4. Manage questions

Brief Description	An admin creating, modifying or removing a question.
Actors	Admin
Preconditions	The admin has signed on to the system.
Main Flow	<p>After the admin has successfully signed on to the system, the admin can create, modify or delete any questions into the database.</p> <p>The questions will be updated into the database and will be added to the question section on the user side.</p>
Alternative Flows	If the admin is not successfully logged in the system, the admin cannot manage the questions.
Postconditions	The record is saved into Katodiet database.

*Table 5. : Use Case Description Manage Questions*



### 3. ER Diagram

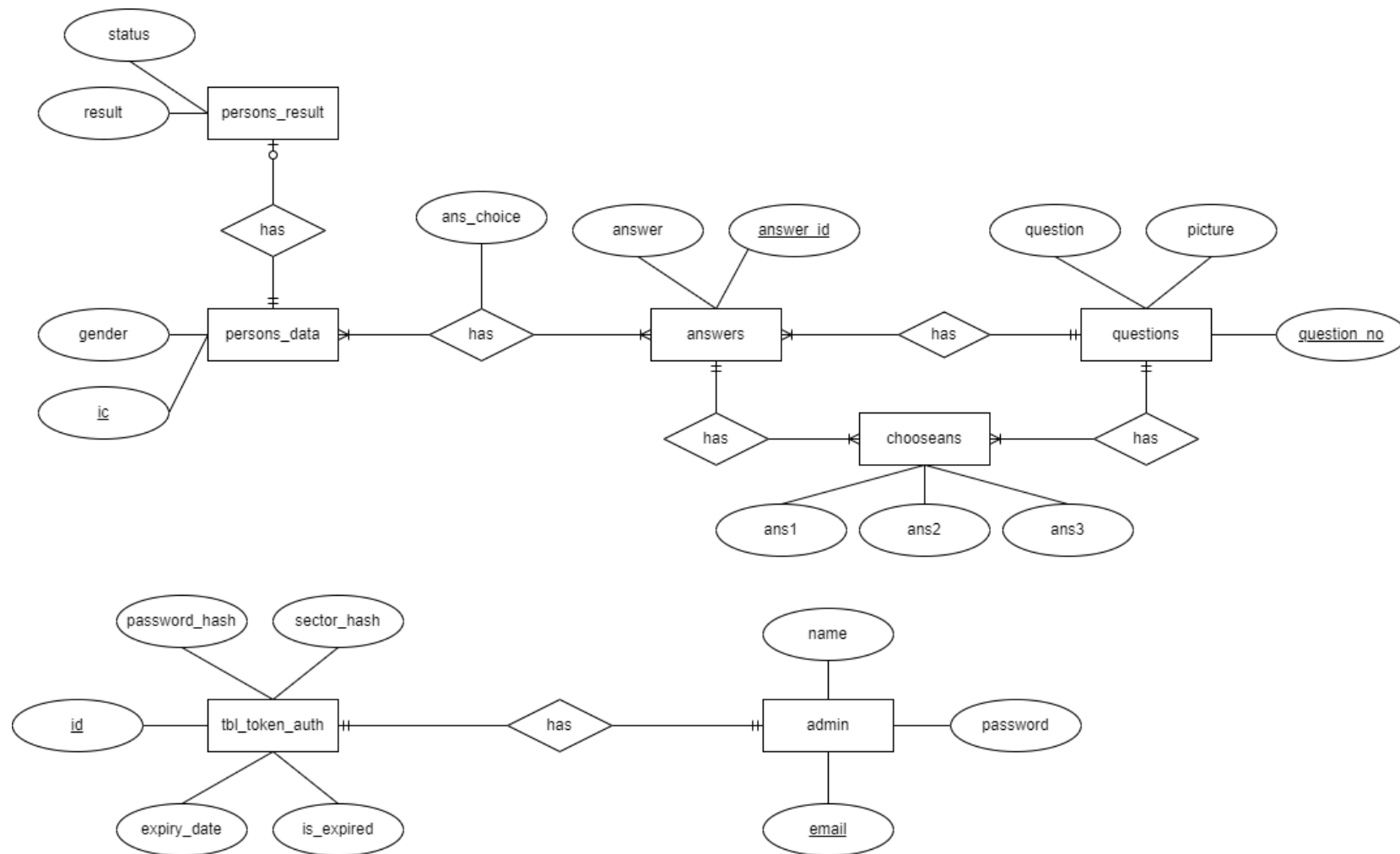


Figure :3. ER Diagram that consists of persons\_data, persons\_result, answers, questions, admin and cookies table.

## 4. Logical Database Design

### 4.1. Admin Table

Server: 127.0.0.1 » Database: webprojectfinal » Table: admin

Browse Structure SQL Search Insert Export Import Privileges Operations

Table structure Relation view

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1 email	varchar(100)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	2 PASSWORD	varchar(50)	utf8mb4_general_ci		Yes	NULL			Change Drop More
<input type="checkbox"/>	3 name	varchar(100)	utf8mb4_general_ci		Yes	NULL			Change Drop More

Check all With selected: Browse Change Drop Primary Unique Index

Add to central columns Remove from central columns

Print Propose table structure Track table Move columns Normalize

Add 1 column(s) after name Go

Indexes

Action	Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
Edit Rename Drop	PRIMARY	BTREE	Yes	No	email	1	A	No	

Figure 4.1: Admin Table

### 4.2. Answers Table

Server: 127.0.0.1 » Database: webprojectfinal » Table: answers

Browse Structure SQL Search Insert Export Import Privileges Operations

Table structure Relation view

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1 answer_id	int(3)			No	None			Change Drop More
<input type="checkbox"/>	2 question_no	int(3)			Yes	NULL			Change Drop More
<input type="checkbox"/>	3 answer	varchar(100)	utf8mb4_general_ci		Yes	NULL			Change Drop More

Check all With selected: Browse Change Drop Primary Unique Index

Add to central columns Remove from central columns

Print Propose table structure Track table Move columns Normalize

Add 1 column(s) after answer Go

Indexes

Action	Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
Edit Rename Drop	PRIMARY	BTREE	Yes	No	answer_id	11	A	No	
Edit Rename Drop	question_no	BTREE	No	No	question_no	11	A	Yes	

Figure 4.2 : Answers Table

### 4.3. Chooseans Table

Server: 127.0.0.1 » Database: webprojectfinal » Table: chooseans

Browse Structure SQL Search Insert Export Import Privileges Operations

Table structure Relation view

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1 answer_id	int(3)			Yes	NULL			Change  Drop  More
<input type="checkbox"/>	2 question_no	int(3)			Yes	NULL			Change  Drop  More
<input type="checkbox"/>	3 ans1	varchar(100)	utf8mb4_general_ci		Yes	NULL			Change  Drop  More
<input type="checkbox"/>	4 ans2	varchar(100)	utf8mb4_general_ci		Yes	NULL			Change  Drop  More
<input type="checkbox"/>	5 ans3	varchar(100)	utf8mb4_general_ci		Yes	NULL			Change  Drop  More

☐ Check all With selected: Browse Change Drop Primary Unique Index Sp

Add to central columns Remove from central columns

Print Propose table structure Track table Move columns Normalize

Add 1 column(s) after ans3 Go

Indexes

Action	Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
Edit  Rename  Drop	question_no	BTREE	No	No	question_no	10	A	Yes	
Edit  Rename  Drop	answer_id	BTREE	No	No	answer_id	10	A	Yes	

Figure 4.3: ChooseAns Table

### 4.4. Persons\_ans

Server: 127.0.0.1 » Database: webprojectfinal » Table: persons\_ans

Browse Structure SQL Search Insert Export Import Privileges Operations

Table structure Relation view

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1 ic	varchar(20)	utf8mb4_general_ci		Yes	NULL			Change  Drop  More
<input type="checkbox"/>	2 answer_id	int(3)			Yes	NULL			Change  Drop  More
<input type="checkbox"/>	3 ans_choice	varchar(100)	utf8mb4_general_ci		Yes	NULL			Change  Drop  More

☐ Check all With selected: Browse Change Drop Primary Unique Index Spa

Add to central columns Remove from central columns

Print Propose table structure Track table Move columns Normalize

Add 1 column(s) after ans\_choice Go

Indexes

Action	Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
Edit  Rename  Drop	ic	BTREE	No	No	ic	27	A	Yes	
Edit  Rename  Drop	answer_id	BTREE	No	No	answer_id	23	A	Yes	

Figure 4.4: Persons\_ans Table

## 4.5. Persons\_data Table

The screenshot shows the 'Table structure' view for the 'persons\_data' table. The table has two columns: 'ic' (varchar(20)) and 'gender' (varchar(10)). The 'ic' column is the primary key. The interface includes a toolbar with options like 'Browse', 'Structure', 'SQL', 'Search', 'Insert', 'Export', 'Import', and 'Privileges'. Below the column list, there are buttons for 'Check all', 'With selected', 'Browse', 'Change', 'Drop', 'Primary', 'Unique', and 'Index'. At the bottom, there is a section for 'Indexes' showing a primary index on the 'ic' column.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	ic	varchar(20)	utf8mb4_general_ci		No	None			Change Drop More
2	gender	varchar(10)	utf8mb4_general_ci		Yes	NULL			Change Drop More

Indexes

Action	Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
Edit Rename Drop	PRIMARY	BTREE	Yes	No	ic	18	A	No	

Figure 4.5: Persons\_data Table

## 4.6. Persons\_result

The screenshot shows the 'Table structure' view for the 'persons\_result' table. The table has three columns: 'ic' (varchar(20)), 'result' (int(10)), and 'status' (varchar(10)). The 'ic' column is the primary key. The interface includes a toolbar with options like 'Browse', 'Structure', 'SQL', 'Search', 'Insert', 'Export', 'Import', and 'Privileges'. Below the column list, there are buttons for 'Check all', 'With selected', 'Browse', 'Change', 'Drop', 'Primary', 'Unique', and 'Index'. At the bottom, there is a section for 'Indexes' showing a primary index on the 'ic' column.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	ic	varchar(20)	utf8mb4_general_ci		No	None			Change Drop More
2	result	int(10)			Yes	NULL			Change Drop More
3	status	varchar(10)	utf8mb4_general_ci		Yes	NULL			Change Drop More

Indexes

Action	Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
Edit Rename Drop	PRIMARY	BTREE	Yes	No	ic	7	A	No	

Figure 4.6: Persons\_result Table

## 4.7. Questions Table

The screenshot shows the 'questions' table structure in a database management tool. The table has three columns: 'question\_no' (int(3)), 'picture' (mediumblob), and 'question' (varchar(100) utf8mb4\_general\_ci). The 'question\_no' column is the primary key. The interface includes tabs for 'Table structure' and 'Relation view', a toolbar with 'Browse', 'Structure', 'SQL', 'Search', 'Insert', 'Export', 'Import', 'Privileges', and 'Operations', and a bottom section with 'Indexes' and 'Add' buttons.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	question_no	int(3)			No	None			Change Drop More
2	picture	mediumblob			Yes	NULL			Change Drop More
3	question	varchar(100)	utf8mb4_general_ci		Yes	NULL			Change Drop More

Check all With selected: Browse Change Drop Primary Unique Index Sp

Add to central columns Remove from central columns

Print Propose table structure Track table Move columns Normalize

Add 1 column(s) after question Go

Indexes

Action	Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
Edit Rename Drop	PRIMARY	BTREE	Yes	No	question_no	10	A	No	

Figure 4.7: Questions Table

## 4.8. Cookies Authentication Table

The screenshot shows the 'tbl\_token\_auth' table structure in a database management tool. The table has six columns: 'id' (int(11)), 'email' (varchar(255) latin1\_swedish\_ci), 'password\_hash' (varchar(255) latin1\_swedish\_ci), 'selector\_hash' (varchar(255) latin1\_swedish\_ci), 'is\_expired' (int(11)), and 'expiry\_date' (timestamp). The 'id' column is the primary key. The interface includes tabs for 'Table structure' and 'Relation view', a toolbar with 'Browse', 'Structure', 'SQL', 'Search', 'Insert', 'Export', 'Import', 'Privileges', 'Operations', 'Tracking', and 'Triggers', and a bottom section with 'Indexes' and 'Add' buttons.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	int(11)			No	None		AUTO_INCREMENT	Change Drop More
2	email	varchar(255)	latin1_swedish_ci		No	None			Change Drop More
3	password_hash	varchar(255)	latin1_swedish_ci		No	None			Change Drop More
4	selector_hash	varchar(255)	latin1_swedish_ci		No	None			Change Drop More
5	is_expired	int(11)			No	0			Change Drop More
6	expiry_date	timestamp			No	current_timestamp()		ON UPDATE CURRENT_TIMESTAMP()	Change Drop More

Check all With selected: Browse Change Drop Primary Unique Index Spatial Fulltext

Add to central columns Remove from central columns

Print Propose table structure Track table Move columns Normalize

Add 1 column(s) after expiry\_date Go

Indexes

Action	Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
Edit Rename Drop	PRIMARY	BTREE	Yes	No	id	8	A	No	

Figure 4.8: Cookies Authentication Table

## 5. Wireframe and Environment Information

### a. Software Information

IDE: Atom

Version: 1.60.0

Electron: 9.4.4

Chrome: 83.0.4103.122

Node: V12.14.1

### b. Hardware Information

Device Name: Laptop-M3ama98e

Processor: AMD Ryzen 7 3750h With Radeon Vega Mobile Gfx 2.30 GHz

Installed Ram: 12.0 Gb (9.94 Gb Usable)

System Type: 64-Bit Operating System, X64-Based Processor

### c. Web Server

Name: Apache/2.4.53 (Win64) OpenSSL/1.1.1n PHP/8.1.4

Database client version: libmysql - mysqlnd 8.1.4

PHP extension: mysqli, curl, mbstring

PHP version: 8.1.4

### d. Database Server

Server: 127.0.0.1 via TCP/IP

Server type: MariaDB

Server connection: SSL is not being used

Server version: 10.4.24-MariaDB - mariadb.org binary distribution

Protocol version: 10

User: root@

Server charset: UTF-8 Unicode (utf8mb4)

### e. phpMyAdmin

Version : 5.1.3

## 6. User Interface

### 6.1. Homepage



Figure :12. Homepage interface

### 6.2. Login Admin

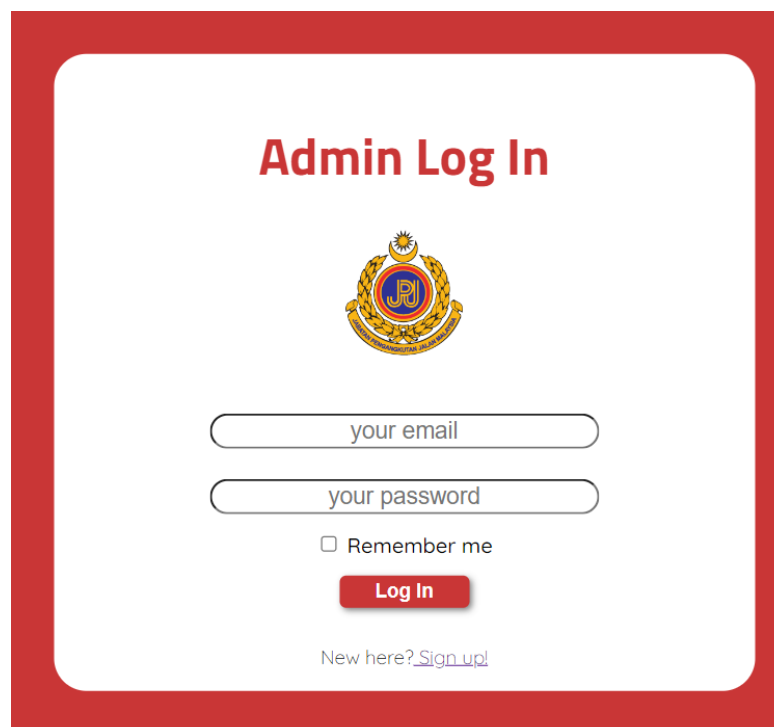
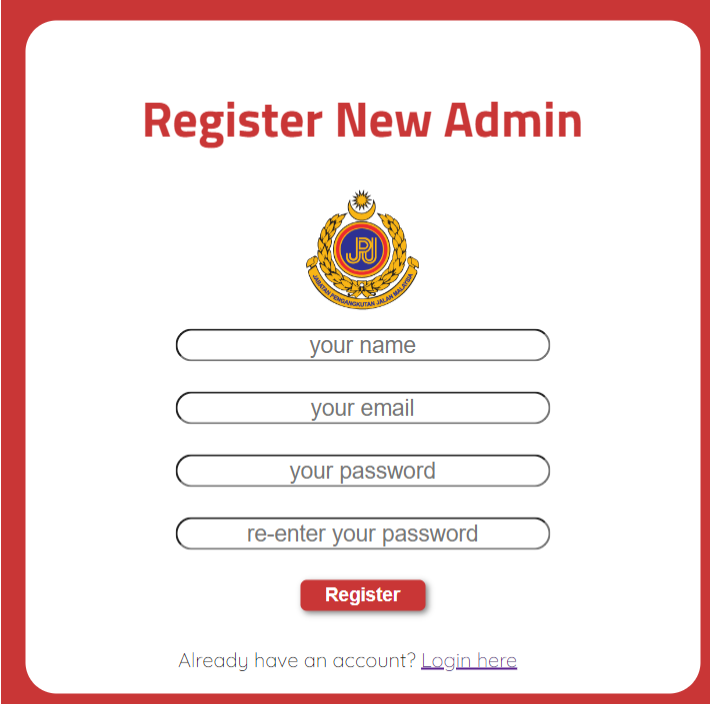


Figure :13. Login Admin interface

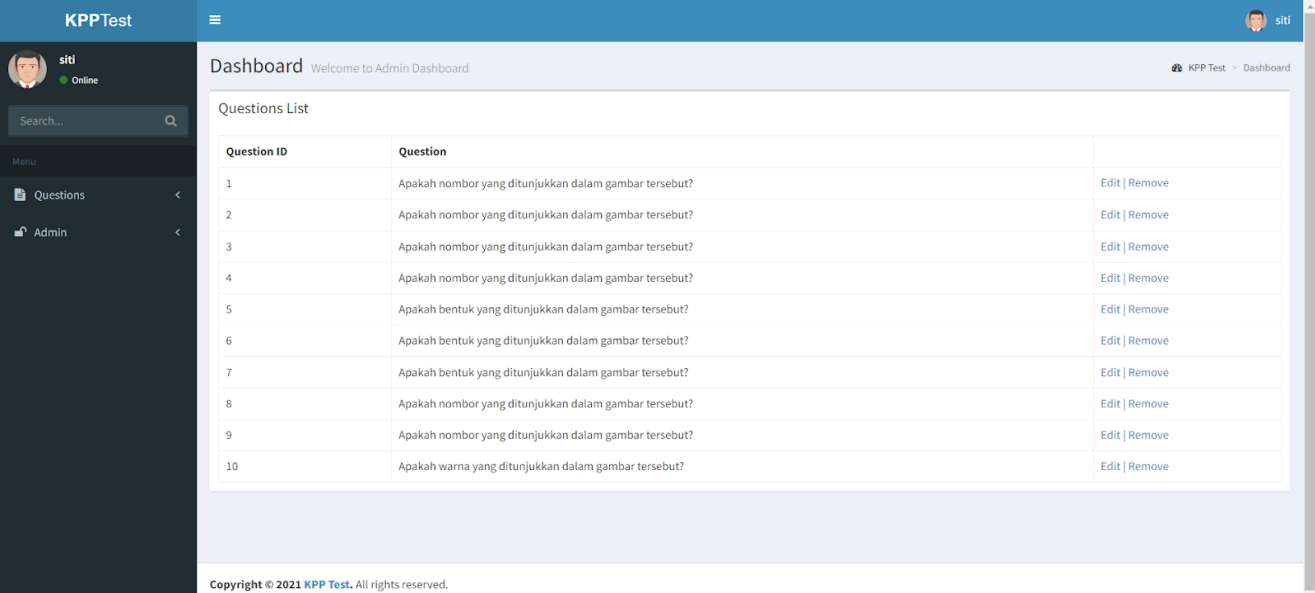
### 6.3. Register Admin



The image shows a registration form titled "Register New Admin" with a red border. At the top center is the JRI logo. Below it are four input fields: "your name", "your email", "your password", and "re-enter your password". A red "Register" button is positioned below the password fields. At the bottom, there is a link: "Already have an account? [Login here](#)".

Figure :14. : Register Admin interface

### 6.4. Admin Index



The image displays the Admin Homepage interface. The top header is blue with "KPPTest" on the left and a user profile "siti" on the right. A sidebar on the left contains a search bar and a menu with "Questions" and "Admin" options. The main content area is titled "Dashboard" and "Welcome to Admin Dashboard". It features a "Questions List" table with 10 rows. Each row contains a "Question ID", a "Question", and "Edit | Remove" links. The footer includes the copyright notice: "Copyright © 2021 KPP Test. All rights reserved."

Question ID	Question	
1	Apakah nombor yang ditunjukkan dalam gambar tersebut?	Edit   Remove
2	Apakah nombor yang ditunjukkan dalam gambar tersebut?	Edit   Remove
3	Apakah nombor yang ditunjukkan dalam gambar tersebut?	Edit   Remove
4	Apakah nombor yang ditunjukkan dalam gambar tersebut?	Edit   Remove
5	Apakah bentuk yang ditunjukkan dalam gambar tersebut?	Edit   Remove
6	Apakah bentuk yang ditunjukkan dalam gambar tersebut?	Edit   Remove
7	Apakah bentuk yang ditunjukkan dalam gambar tersebut?	Edit   Remove
8	Apakah nombor yang ditunjukkan dalam gambar tersebut?	Edit   Remove
9	Apakah nombor yang ditunjukkan dalam gambar tersebut?	Edit   Remove
10	Apakah warna yang ditunjukkan dalam gambar tersebut?	Edit   Remove

Figure :15. : Admin Homepage interface



## 6.5. Admin Add Question

The screenshot shows the 'Add Question' form in the KPP Test Admin Dashboard. The form includes fields for 'Question', 'Answer 1', 'Answer 2', and 'Answer 3', each with a 'Submit' button. The dashboard header shows 'KPP Test' and 'siti' (Online). The sidebar menu includes 'Questions', 'Add New Question', 'All Questions', and 'Admin'. The footer displays 'Copyright © 2021 KPP Test. All rights reserved.'

Dashboard Welcome to Admin Dashboard

Add Question

Question

Enter Question

Answer 1

Enter Option 1

Answer 2

Enter Option 2

Answer 3

Enter Option 3

Submit

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Figure :16. Admin add question function interface

## 6.6. Admin View Result

The screenshot shows the 'Questions List' table in the KPP Test Admin Dashboard. The table has four columns: 'No', 'Identification Card Number', 'Result', and 'Status'. It contains 8 rows of data. The dashboard header shows 'KPP Test' and 'siti' (Online). The sidebar menu includes 'Questions', 'Admin', 'Register Admin', and 'Display result'. The footer displays 'Copyright © 2021 KPP Test. All rights reserved.'

Dashboard Welcome to Admin Dashboard

Questions List

No	Identification Card Number	Result	Status
1	010910145647	10	PASS
2	011220015677	9	FAIL
3	121212121212	9	FAIL
4	232323232323	10	PASS
5	234234234234	9	null
6	345345345345	9	FAIL
7	567567567567	10	PASS
8	987987987987	9	FAIL

Copyright © 2021 KPP Test. All rights reserved.

Figure :17. : Admin view results of user interface

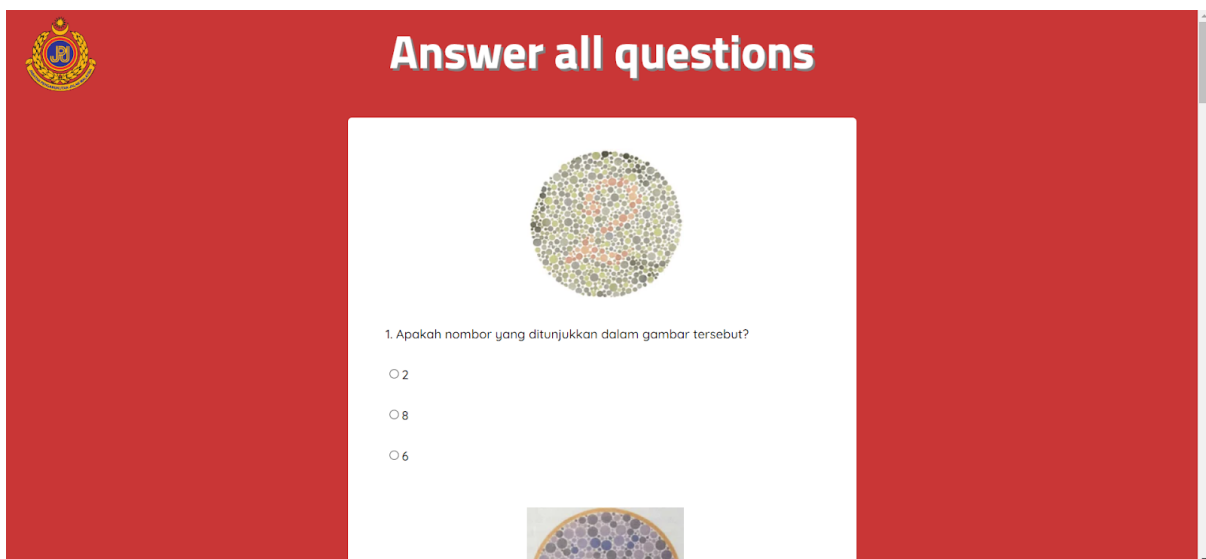
## 6.7. Login User



The login interface is a white rounded rectangle centered on a red background. At the top, it says "Selamat Datang ke Ujian KPP 2022" in red. Below this is the JPP logo. The text "Sila masukkan butiran diri" is centered. There is a text input field for "IC Number :". Below that are radio buttons for "Gender : Male" and "Female". At the bottom are two red buttons: "Cancel" and "Register".

Figure :18. User login interface

## 6.8. User Questions



The interface has a red header with the JPP logo on the left and the text "Answer all questions" in white. The main content area is white and contains a circular image of a dot pattern. Below the image is the question: "1. Apakah nombor yang ditunjukkan dalam gambar tersebut?". There are three radio button options: "2", "8", and "6". At the bottom of the question area is a small rectangular image of a dot pattern.

Figure :19. : List of questions interface

## 6.9. User Result

### Total Marks / Result

Total Marks	Pass/Fail
10	PASS

Soalan ini menentukan keputusan Ujian Buta Warna anda.  
Markah keputusan ialah 10 menandakan anda lulus!



Hubungi Kami:

+60 3 8000 8000 (Umum)

+60 3 8881 0194 (Faks)

Address:

Jabatan Pengangkutan Jalan  
Aras 3-5, No. 26,  
Jalan Tun Hussien, Presint 4,

Jabatan Pengangkutan Jalan Malaysia

Jabatan Pengangkutan Jalan (JPI) telah ditubuhkan pada tahun 1937, di bawah Enakmen Lalulintas 1937. Undang-undang tentera British di Negeri-negeri Melayu Bersekutu. Pentadbirannya pada ketika itu dikenali sebagai Lembaga Pengangkutan Jalan yang berfungsi mengawal dan melesenkan perusahaan awam. Dengan wujudnya pentadbiran Tanah Melayu pada April 1946, kuasa lembaga tersebut telah diambil alih oleh Pejabat Pendaftaran dan Pemeriksaan Kereta-kereta Motor yang merangkumi

Figure :20. Display result interface

## 7. Appendix

### 7.1. Program code

The code of the system can be retrieved by using this link,  
<https://drive.google.com/drive/folders/1UaJ9BB1mAy1RzmXLssWsRWt7hNdrw427?usp=sharing> .

### 7.2. Demonstration Video

The demonstration video can be viewed by using this link,  
<https://drive.google.com/drive/folders/17HArIWD2c-H4KeyjVdV5-JWPQ0Kyo2mi?usp=sharing> .

## 8. References

1. Otto, M. (2022). Bootstrap.Getbootstrap.com website: <https://getbootstrap.com/>
2. Ujian KPP – JPJ KPP Test 2022. (2022). Ujianskpp.com website: <https://ujianskpp.com/>